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> Cooperative test correction (Required!)

Due Dates

3/24 Problem solvers turn complete corrections in to their coaches.

3/26 coaches return corrections with comments

3/31 Problem solvers turn perfect corrections in to Prof. Lacoste

§ 6.1 Composite functions PG 64

$f(x) = 3x - 9$

$f(\boxed{4x+8}) = 3 \cdot \boxed{4x+8} - 9$

$= 12x + 24 - 9$

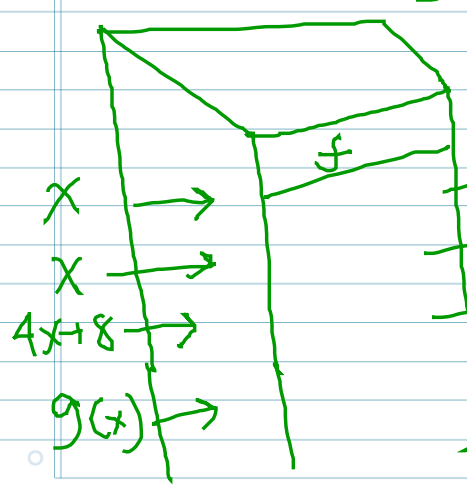
$= 12x + 15$

compose name

$(f \circ g)(x) = f(g(x))$

"f compose g of x"

equals "f of g of x"



$f(x)$

$3x - 9$

$3(4x+8) - 9$

$= 12x + 24 - 9$

$= 12x + 15$

$f(g(x))$

$f(4x+8) - 9$

$12x + 15$

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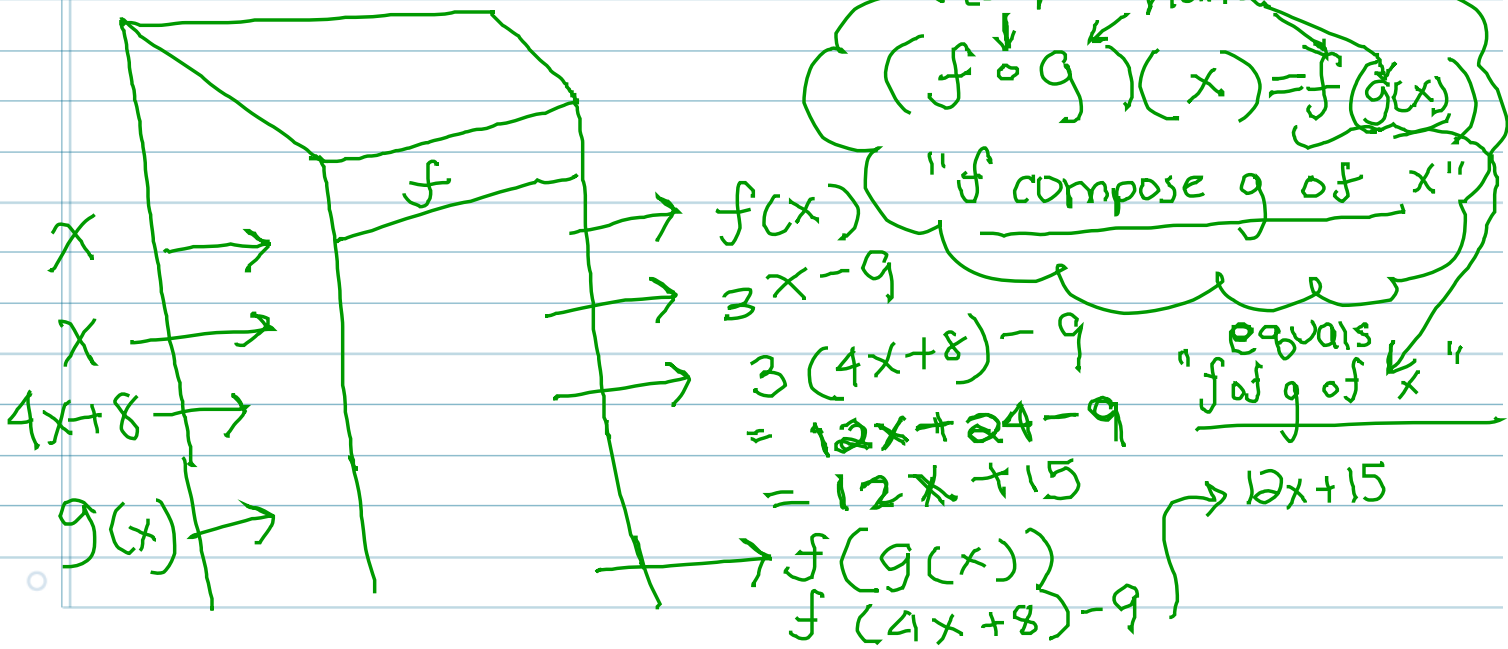

compose name

$(f \circ g)(x) = f(g(x))$

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"equals "f of g of x"

7 & 8

$(f \circ g)(4)$

$= f(g(4))$

inside ↑ out ↑

$= f(4)$ ← look at the graph

x	g(x)
-1	5
0	7
1	6
2	4
3	3
4	4
5	6
6	7
7	7

$g(4) = 4$

$f(4) = \boxed{-4}$

$(g \circ f)(-1)$

$g(f(-1))$ ← look at the graph

$g(1) = ?$

$= \boxed{6}$

10) $f(x) = 5x^2 - 4$

$g(x) = 7 - \frac{1}{2}x^2$

find $(g \circ g)(0)$?

$(g \circ g)(0)$

$g(g(0))$

↳ $g(0) = 7 - \frac{1}{2}x^2$

$g(7 - \frac{1}{2}(0)^2)$

$g(7) = ?$

$g(7) = 7 - \frac{1}{2}(7)^2$

$= 7 - 24.5$

$= \boxed{-17.5 \text{ or } -\frac{35}{2}}$

find $(f \circ f)(x)$

$f(f(x))$

$f(5x^2 - 4)$

$f(5x^2 - 4) = 5(5x^2 - 4)^2 - 4$

$= 5(25x^4 - 40x^2 + 16) - 4$

$= 125x^4 - 200x^2 + 80 - 4$

$= \boxed{125x^4 - 200x^2 + 76}$

On your own

$(f \circ g)(-1)$

$f(g(-1))$

$f(5) = \boxed{-5}$

$(g \circ f)(0)$

$g(f(0))$

$g(0) = ?$

$= \boxed{7}$

find $(f \circ f)(x)$

$f(f(x))$

f

$f(x) =$

$f(x) = 5x^2 - 4$

$(f \circ f)(x)$

$f(f(x))$

$f(5x^2-4) = ?$

$f(5x^2-4) = 5(5x^2-4)^2 - 4$

$= 5(25x^2 - 40x^2 + 16) - 4$

$= (125x^2 - 200x^2 + 80) - 4$

$= 125x^2 - 200x^2 + 80 - 4$

$= \boxed{125x^2 - 200x^2 + 76}$

(9) $f(x) = 7x$

$g(x) = 4x^2 + 5$

find $(g \circ g)(0)$

$= g(g(0))$ ↳ $= 4x^2 + 5$

$= g(4(0)^2 + 5)$

$= g(5) = 4\square^2 + 5$

$= 4(5)^2 + 5$

$= 4 \cdot 25 + 5$

$= 100 + 5$

$= \boxed{105}$ ← ANSWER

find $(f \circ f)(x)$

$f(f(x))$

$f(7x) = 7\boxed{7x}$

$= \boxed{49x}$ ← ANSWER